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ABSTRACT

Efforts to restore America's competitive position must proceed from an accurate definition of what competitiveness is. The U.S. competitiveness problem has three dimensions: long-standing structural problems, macroeconomic policies, and the trade and economic policies of foreign countries. The long-term erosion of U.S. competitiveness is suggested by the behavior of several different indicators: wages, income, and profit; productivity; merchandise trade; current account; technology; human resources; and capital formation. Growing acknowledgment of the competitiveness problem increases the likelihood of new policy initiatives. To create an environment that is conducive to private sector productivity, government must undertake a number of steps: making a sustained and substantial reduction in the federal budget deficit, developing policy initiatives to strengthen the international trading environment, making domestic trade policy a national priority, making technology a continuing competitive advantage, and creating policies to improve America's human resources. U.S. corporations, colleges and universities, and labor unions have a primary responsibility for restoring American competitiveness. (YLB)

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AMERICA'S COMPETITIVE CRISIS:

CONFRONTING THE NEW REALITY

A
Report by the
Council on Competitiveness

U.S. DEPARTMENT OF EDUCATION
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INTRODUCTION

America has discovered competitiveness. President Reagan made restoring the competitive edge of American industry and American workers the centerpiece of his 1987 State of the Union Address and the cornerstone of his agenda for the next two years. Federal lawmakers, on both sides of the aisle and both sides of Capitol Hill, similarly have pledged a series of far-reaching legislative initiatives during the 100th Congress. The concern of public policymakers is shared by corporate, labor and education leaders. The formation of the Council on Competitiveness is only one indication of the private sector's commitment.

Indeed, it appears that improving the ability of the United States to compete in world markets suddenly has emerged at the top of the national agenda. And it appears likely to remain there, at least through the 1988 presidential election.

From the recent flurry of attention and activity, one might assume that America's competitiveness crisis burst upon us overnight. In fact, the erosion of our economic strength began 20 or 30 years ago. Following World War II, the United States took for granted the tremendous competitive advantages it enjoyed, while other nations viewed competitiveness as a right to be earned and established industrial development as a national priority. Our current problems in many ways reflect the culmination of several decades of this complacency at home and well-executed government and private sector efforts in other countries. In recent years macroeconomic policies have compounded these problems.

That we have been slow to recognize the importance of competiwiveness is due primarily to wishful thinking, coupled with the unique complexity of the issue. We've never had a challenge quite like it. Americans have always surmounted obstacles one by one, whether it was taming the West, sending a man to the moon, or cleaning up the environment.

The competitiveness challenge is much more complicated and, partly for that reason, much more threatening. It calls into question some basic values and long-held assumptions. Can we produce efficiently? Can we educate ourselves for the new demands of the new economy? Can we make the necessary sacrifices and stop living beyond our means? Can we temper our unbridled individualism with measures of collaboration and partnerships where appropriate? Can we begin to govern ourselves more by consensus and less by contention?

We are confident that the answer to each question is yes. First,

however, we need to appreciate the true dimensions of the challenge and to agree on the elements that comprise a nation's competitiveness. We must define what competitiveness is -- and what it is not.

Next, we need an accurate and up-to-date assessment of our standing in global markets. It is essential that we review the proper indicators, especially since so many of the recent economic signs seem so promising: lower inflation, declining interest rates, millions of new jobs and a booming stock market. Yet this positive economic news has obscured some fundamental problems in the American economy.

Finally, we need to understand the public policy implications of our declining competitiveness. Our outline is not a detailed blueprint, but rather a preliminary agenda of the key policies that must be addressed. Just as it is important to pick the right indicators when measuring competitiveness, it is equally important to focus on the right policies when remedying problems. Focusing on the wrong issues could compound our difficulties.

Solutions must come from both the public and private sectors. Some observers are concerned that the competitiveness issue is merely a smokescreen, a Trojan Horse behind which business, education, and labor are lobbying for special-interest government favors. Others are concerned that it is merely a slogan aimed at reducing workers' wages and incomes. To the contrary, we private sector leaders understand our ultimate responsibility for improving America's ability to compete, and how closely this is related to improving the U.S. standard of living. Despite some progress in the past few years, however, we are far from getting our own houses in order.

Many of the problems we face were comprehensively addressed in the 1985 report of the President's Commission on Industrial Competitiveness. The Council on Competitiveness intends to participate in the process of providing solutions to these problems. First, however, it is important to understand the current environment. The purpose of this paper is to discuss the scope of the problems facing the United States, put them in historical perspective, and describe changes that have occurred since the 1985 report. It is not meant to be a meticulous economic analysis but a description of the competitiveness problems facing the nation.

In essence, this report is designed to issue the competitiveness challenge -- to all Americans. Without broad recognition of the problem and a commitment to make it a personal and professional priority, restoring American competitiveness will remain an elusive goal. When pressed in the past, the United States has always been

able to prove that its values are sound and its institutions are resilient. As awareness grows of the far-reaching dimensions of the competitiveness crisis, we are encouraged that the American people and its leaders are beginning to respond.

We will not solve the competitive crisis overnight. We will not solve it unilaterally. With a sustained effort from all of us, working together, we can succeed. The Council on Competitiveness is singularly dedicated to that objective.

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In setting the stage for an extended discussion on competitiveness, four preliminary observations are critical. First, it must be recognized that the trade deficit is only part of the problem and its resolution is only part of the solution. Second, America's competitiveness problems are long-standing, dating back to the 1960s and 1970s. Third, America's competitiveness crisis is complex, calling into question such long-time U.S. strengths as productivity growth and technological innovation. Fourth, competitiveness is a basic pocket-book issue directly related to our standard of living. Just as all sectors of U.S. society contributed to the competitiveness problem, all must work together to restore America's competitive advantage.

Defining Competitiveness

Efforts to restore America's competitive position must proceed from an accurate definition of what competitiveness is. Otherwise, public policies and private sector initiatives could very likely address the wrong problems, with potentially disastrous consequences for American producers and consumers alike.

The Council endorses the definition offered by the President's Commission on Industrial Competitiveness in 1985: "[Competitiveness is] the degree to which a nation, under free and fair market conditions, produces goods and services that meet the test of international markets while simultaneously maintaining and expanding the real incomes of its citizens."

The U.S. competitiveness problem has three dimensions: 1) long-standing structural problems, such as declining productivity growth, slow commercialization of new discoveries, and inadequate human resource development; 2) macroeconomic policies that drove up the value of the dollar between 1980 and 1985, and exacerbated these longer-term structural problems; and 3) the trade and economic policies of foreign competitors.

The recent decline of the dollar will help U.S. producers compete. So will an aggressive trade policy that promotes U.S. commercial interests at home and abroad. It is critical to understand, however, that competitiveness is not simply the ability to sell abroad or to maintain a sustainable trade position at some exchange rate. The very poorest nations often boost exports just by significantly devaluing their currencies. The consequences, however, are sharp declines in relative wages and relative standards of living -- a high price to pay. The complexity and severity of the

problem require the United States to focus on both macroeconomic and structural solutions. Productivity growth, technological innovation, the quality and design of products, and an educated and motivated work force are all critical to enhanced competitiveness.

Measuring America's Performance

Just as competitiveness cannot be simply defined, neither can it be simply measured. The long-term erosion of American competitiveness does not show up completely in any single measurement, but rather is demonstrated by several indicators. Together, they paint a portrait of a decline that began more than 20 years ago.

Wages, Incomes and Profits. Although trade figures receive the most attention and have prompted the most alarm over America's competitiveness crisis, there are several signs that the broadest and most meaningful overall indicator is America's standard of living. The U.S. standard of living has been growing much more slowly than in the past, and real wages have actually declined. From 1973-1985, real average hourly wages in all non-agricultural sectors in the United States fell by about 5 percent. Since 1979, corporate profitability has also decreased. Furthermore, the new jobs created in the United States from 1979-1985 -- in some areas of the services and retail trade sectors, for instance -- pay on an average far less ($272 weekly wage) than did the jobs that were lost ($444 weekly wage).

Productivity. Over the past 25 years, productivity growth in the United States has been significantly lower than in many other advanced industrial nations. Preliminary estimates indicate that in 1986 U.S. business sector productivity growth increased by only 0.7 percent. For nonfinancial corporations, productivity growth in 1986 was zero. The aggregate U.S. productivity level remains the highest in the world, but U.S. producers' once-substantial advantage has narrowed considerably or disappeared altogether in a number of key sectors--such as steel, autos, machine tools and semiconductors.

Merchandise Trade. The United States did not register a merchandise trade deficit in this century until 1971. Since then, however, U.S. trade deficits have risen dramatically. The 1986 deficit was $170 billion, up 20 percent from 1985. The deterioration in the U.S. trade position was most pronounced in manufactured products, which account for three-fourths of all U.S. trade, and extended even to high-technology manufactured products, which posted the first deficit ever in 1986.

Current Account. The 1986 current account deficit was $140 billion, up from the record $118 billion deficit in 1985. As a result of five years of living and consuming beyond its means, the United States has seen its 1981 current account surplus of $6.3 billion turn into a $140 billion deficit. The United States has gone from a net creditor, with $150 billion of foreign assets in 1982, to a net debtor, with $220 billion of foreign debt in 1986. It is estimated that U.S. foreign debt could

increase to between $500 and $800 billion by 1990.

Technology. Technology is critically important to U.S. competitiveness, both as it is transformed into marketable products and as it is used to improve productivity. Yet, there are a number of signs that U.S. technological superiority is being eroded.

The United States continues to spend far more on R&D than any other nation, but both Japan and West Germany spend a greater percentage of their national incomes on civilian R&D than the United States. In addition, the United States is having difficulty translating its scientific breakthroughs into commercially successful products.

The Federal investment in R&D facilities and equipment has declined 95 percent in the past twenty years, although some improvement has occurred since 1984. The growth in R&D spending by U.S. companies has increased from the low levels of the 1970s, in part due to the R&D tax credit, but the growth has been even higher in Japan and West Germany.

The share of U.S. patents going to American citizens has been declining since the mid-1960s and reached a new low in 1986, when foreign nationals received almost half (45 percent) of U.S. patents. And despite recent improvements, the United States continues to trail its major competitors, Japan and West Germany, in the number of engineers and scientists per capita.

Human Resources. Increased productivity and technological innovation depend directly on educated, skilled and motivated people. There are many indications, however, that the United States is not doing an adequate job of educating students, training current employees and retraining dislocated workers.

Tens of millions of American adults (some estimate 20 percent of the total) are functionally illiterate. More than one-quarter of today's high-school students drop out before graduation. The percentages are even higher among minorities. A recent study of reading skills of 17-year-olds found that less than half performed at higher than basic or intermediate levels. A separate study of math skills showed that U.S. twelfth-grade students significantly trailed their foreign counterparts. There are now approximately two million displaced American workers in the United States.

Although 75 percent of the current work force will still be working in the year 2000, programs to upgrade their skills through training are inadequate. Continuing labor-management tensions in some areas help contribute to low U.S. productivity, as do inadequate reward systems and incentives.

Capital Formation. The availability of sufficient capital, plus the willingness to invest it aggressively in new factories, research facilities, automation and the like, is essential to the nation's competitiveness. The United States is failing to keep up with its major competitors in several critical areas.

The enormous and growing Federal budget deficit has affected capital formation by driving up interest rates and by siphoning off resources that could be used more productively. Over the past decade, the U.S. discount rate has been significantly higher than

those of West Germany and Japan. Although U.S. interest rates have been halved in the past four years, foreign interest rates also have declined. America's gross fixed capital investment (as a percentage of Gross National Product) fell further behind that of its major international competitors in 1985. Despite the late 1986 surge in orders, overall business spending on new plant and equipment fell 1.7 percent from 1985 levels. The gross private savings rate in the United States remains well below the levels of foreign nations, as does the personal savings rate, which reached a new low of 3.9 percent of disposable income in 1986.

Federal Policy Implications

The growing acknowledgment of the competitiveness problem increases the likelihood of new policy initiatives. The danger in policy formulation is no longer insufficient attention to the problem, but excessive reliance on competitiveness as an umbrella under which to promote a number of often-conflicting policies, many of which have little or nothing to do with competitiveness and some of which may actually harm it.

Although the first order of business is to address the macroeconomic policies that have resulted in currency misalignment, it is not enough simply to change macroeconomic policies. The U.S. Government should develop a trade policy that better safeguards U.S. interests in an economic environment where foreign government intervention has become commonplace. Government must also develop policies that can better promote the effective development and use of America's abundant technological and human resources. In adopting these changes, government will be fulfilling its obligation to create an environment that is conducive to private sector productivity.

Federal Budget Deficit. The first step must be a sustained and substantial reduction in the Federal budget deficit. Otherwise, simultaneous efforts to reduce the value of the dollar and stem the inflow of foreign products will be ineffective: domestic interest rates and inflation will increase, leading to further reductions in the standard of living. In reducing the Federal deficit, policymakers must be careful not to erode long-term competitiveness in the name of short-term fiscal frugality. For instance, tax increases that further reduce business incentives to invest and innovate or expenditure cuts concentrated on productive human resource development, R&D support, and programs that enhance productivity could be counterproductive.

International Economic Policy. A more effective mechanism for coordinating macroeconomic policy and exchange rates among advanced industrial countries must be developed to prevent the massive trade imbalances that are politically and economically unsustainable. A credible U.S. deficit-reduction package will help facilitate the ongoing efforts of the Group of Five (United States, Japan, West Germany, Great Britain and France).

Similarly, an effective solution to the Third World debt crisis has not been implemented. The result has been a continuing deterioration of the debt situation in many lesser developed

nations and a continued deterioration in the U.S. trade position with these countries.

As the world's largest economic power, the United States must continue to take the lead in improving multilateral trade agreements. American efforts to initiate and shape a new round of GATT negotiations are important steps in moving toward the creation of a more open trading system. Special emphasis should be placed on improving the operations of current rules and expanding coverage to sectors such as services, and special attention to issues of intellectual property and direct foreign investment.

Domestic Trade Policies. The Council is encouraged by the growing recognition of the importance of trade to the nation's overall well-being, and by ongoing efforts of the Congress and Administration to develop a trade policy that better safeguards U.S. commercial interests. Trade must become a national priority, not just today, but in the future, and active implementation and enforcement of U.S. trade rights must become a hallmark of U.S. trade policy.

Technology Policies. A number of policy improvements have been made to enhance the development and diffusion of U.S. technology. Reductions in antitrust barriers have encouraged greater cooperation in the private sector. Steps have been taken to improve the protection of U.S. intellectual property and to increase government funding of basic research. The Administration and Congress are currently examining recommendations in several broad areas: improved R&D collaboration among corporations and between the business and higher education sectors; improved transfers of federally funded technology to the private sector; increased financial support, through direct funding or tax incentives; and enhanced scientific literacy. There has been no action to boost tax incentives for R&D investment.

Human Resources Policies. Several positive initiatives have been adopted or are being considered that would enhance the ability of American workers to improve their contribution to U.S. productivity. The Council is especially encouraged by the number of state and local efforts to improve the primary schools; by the fact that the Administration and Congress are committed to developing an adjustment policy for dislocated workers; and by the number of new Engineering Research Centers administered by the National Science Foundation. The Council is disturbed, however, by the proposed reductions in college student aid and vocational education.

Private Sector Initiatives

U.S. corporations, colleges and universities, and labor unions have a primary responsibility for restoring American competitiveness. Mobilizing the full capabilities of workers, investing capital wisely, picking markets strategically, educating and training people broadly and managing assets prudently -- all are the ultimate responsibility of the private sector. Unfortunately, too few have recognized the severity of the competitive crisis or

responded sufficiently. Efforts to translate research breakthroughs into commercial products are inadequate; labor-management antagonisms in some areas remain unacceptably high; product quality by the standards of the new competition remains unacceptably low; and the United States needs to do more in the area of manufacturing technology.

Nevertheless, improvements have been made. Among the more promising signs are: the expanded number of partnerships and joint ventures involving business, higher education and labor; more cooperative labor-management relations; a new focus on productivity growth; the increased use of advanced technology to improve production; and adoption of innovative management and marketing techniques by small, medium and large companies alike.

Change will not occur overnight. And simply improving on past performance will be insufficient, given that America's foreign competitors are constantly improving, too.

DEFINING COMPETITIVENESS

Much of the debate about whether the United States has a competitiveness problem, whether it is severe or insignificant, and whether it is temporary or long-term, turns on differences in the definition of competitiveness. The President's Commission on Industrial Competitiveness defined competitiveness as "the degree to which a nation, under free and fair market conditions, produces goods and services that meet the test of international markets while simultaneously maintaining and expanding the real incomes of its citizens."[1]

Large U.S. trade deficits and the growing inability of the United States to maintain and expand the real incomes of its citizens are at the core of the competitiveness debate. These developments can be traced to long-standing structural problems in the U.S. economy, as well as to the effects of macroeconomic policy that emerged in the 1980s.

Productivity growth, technological innovation and human skill and motivation are critical structural determinants of competitiveness. Only by increasing productivity, developing new products and processes, improving education and training, and effectively managing human resources will U.S. companies be able to offer competitive prices while maintaining and increasing the real wages they pay their workers. Only by cutting the costs of production can producers pay higher wages and charge competitive prices without sacrificing the profits necessary for continued development and reinvestment in business.

Productivity growth must be matched by improvements in product quality, serviceability and innovation. For products that compete on the basis of such features, including many of the high-technology products that now account for about 41 percent of U.S. trade in manufactures, technological improvements in process or product design are usually the key to competitiveness.

Similarly, it is critical that the United States produce the right mix of goods and services. Over the long run, competitiveness depends on the ability of U.S. producers to compete in products that have the greatest potential for future growth and that promise to yield the greatest technological benefits for the rest of the economy. A nation that had the highest productivity in the manufacture of buggy whips in 1910, for instance, would not have had quite the economic prospects of a nation that had the highest productivity in automobiles.

By themselves productivity advances, new technology, better products, and improvements in human capital cannot guarantee that the United States will be able to compete in world markets and maintain and expand the real income of its citizens. Macroeconomic policy also affects the ability of U.S. firms to compete in

world markets. In the area of macroeconomic policy, large and growing Federal budget deficits have affected domestic savings and investment flows. In doing so, they have driven up the value of the dollar, siphoned off capital that could have been used more productively by U.S. business, and applied upward pressure on real interest rates. Similarly, foreign macroeconomic policies have affected U.S. firms' ability to compete. Stronger U.S. growth relative to that of our major trading partners fueled consumption that was satisfied in partby foreign imports. At the same time, slow growth abroad, coupled with the protracted LDC debt crisis, reduced demand for U.S. products.

The dollar appreciation from 1980 to 1985 superimposed a short-term competitiveness problem on a more disturbing longer-term one. The sharp increases in the dollar's value and the U.S. trade deficit in the early 1980s exacerbated more deep-seated problems that began in the late 1960s, when the United States' productivity performance and technological lead started to decline compared to its major competitors. Unfortunately, the short-term problem masked the long-term one, leading some observers to conclude that but for temporary exchange-rate misalignment, the U.S. economy was competitively healthy.

The Commission's expanded definition of competitiveness does not deny that the dramatic rise in the value of the dollar was a factor behind the deterioration in the U.S. trade deficit after 1981 or that the dollar's sharp fall since 1985 will gradually reduce the deficit. Nevertheless, improvements in technology, productivity and human capital may be able to partially offset a competitive disadvantage in international markets caused by an appreciating exchange rate. Such improvements also can create a competitive advantage in lieu of a depreciating exchange rate or a cut in wages.

Although the strong dollar and its macroeconomic causes are not solely responsible for creating America's competitive problem, they must be addressed as part of its solution. At the same time, improvements in macroeconomic policy will be insufficient unless simultaneous changes are made to increase U.S. productivity growth, develop and implement new technology, and better train and equip American labor and management. This combination of factors is the essence of the competitiveness issue and what differentiates it from more narrowly defined trade problems or productivity problems. And just as the problem has several dimensions, so must its solutions.

MEASURING AMERICA'S PERFORMANCE

Just as competitiveness cannot be simply defined, neither can it be simply measured. The long-term erosion of U.S. competitiveness does not show up in any single indicator, but rather is suggested by the behavior of several different ones.[2] In popular discussions, measures of external economic performance, such as the trade balance, the broader current account balance or U.S. shares in important world markets are often used to gauge America's competitiveness. Indeed, it is not an exaggeration to say that concern over the trade deficit has provoked the swell of interest in the issue. The trade imbalance or related measure of external market performance are important indicators of competitiveness, but they do not by themselves tell the whole story. Taken in isolation, they can be misleading.

A key measure of national competitiveness is real wage growth or a broader measure of real income growth. Since long-run competitiveness depends on improved productivity and technological performance, measures of such performance over time also are critical indicators. Finally, because the quantity of capital and quality of labor resources are critical determinants of national productivity and technological performance, measures of America's ability to sustain a high-quality, flexible labor force and to support a high savings and investment rate also are important indirect indicators.

Although any one of the measures identified here has limitations as a competitiveness indicator, together they provide a compelling portrait of a nation's competitive health. This chapter updates the findings of the 1985 report by the President's Commission on Industrial Competitiveness (PCIC). The evidence indicates that since the publication of that report, the competitiveness of the U.S. economy has continued to erode.

Wages, Incomes and Profits

Although trade figures receive the lion's share of attention, the broadest and most meaningful indicator of America's declining competitiveness is the standard of living. Real wages and real incomes determine how much Americans have to spend, just as corporate profits customarily are used to measure U.S. business success. In a very real sense, all other indicators pale next to these in measurement. Unfortunately, after steady and rapid gains from the end of World War II through the early 1970s, the three have shown a persistent though erratic downward trend.

Despite some gains, notably after the 1981-82 recession, real wages remain far below the levels of the early

1970s. (See Figures 1 and 2, page 5.) The decline in real wages has occurred throughout the economy, from manufacturing to retail trade and other services. In manufacturing, the real weekly wage (measured in 1985 prices) fell by about 4.3 percent between its 1973 peak and its 1985 level; the comparable decline in the real hourly wage in manufacturing was 3.9 percent. Although fringe benefits have risen, the real average hourly earnings in all non-agricultural establishments declined by 5 percent over the same period.[3] Preliminary data suggest that real wages were virtually stagnant in 1986.

The decline in real wages is the major reason for the decline in real family incomes that occurred between 1973 and 1985 for most families, regardless of the number of income-earners per family or the race and age of family members. Overall, the median real family income declined by about 5 percent from 1973 to 1985, and the proportion of American families with incomes below $20,000 increased from 30.6 percent to 34.0 percent.[4]

Declining real wages and family incomes have a number of causes, including slower growth of output, slower productivity growth and higher inflation rates in consumer prices from 1974 to 1981. Another important factor is the recent pattern of job creation and job destruction. For example, from July 1981 to July 1986, the U.S. economy generated 8.6 million jobs. The service sector alone, however, produced 9.5 million new jobs (see Figure 3, page 6), indicating a significant loss of goods-producing jobs. There were 1.2 million fewer manufacturing jobs and 400,000 fewer mining jobs in July 1986 than at the last economic peak in July 1981. During those five years, construction was the only bright spot in the goods-producing sector, adding almost 800,000 jobs.

In addition to construction, the most significant gains in employment have come in services, such as retailing, wholesaling, health, business services and finance. Many of these are not exposed to international competition. More significant, the average wages for jobs created from 1979 to 1985 were considerably lower than the average wages of the jobs lost: service jobs, on average, pay less than goods-producing jobs (see Figure 4, page 6); and jobs in industries that export or compete with imports generally pay more than those in the rest of the economy. Thus, the loss of such jobs caused by the growing trade imbalance forced workers into lower-paying occupations, thereby pulling down the average real wage in manufacturing and in the economy as a whole.[5]

The decline in real wages has been accompanied by relatively poor performance in various measures of corporate profitability. The corporate rate of return on assets in the manufacturing sector, for instance, fell dramatically from its 1979 peak through the 1982 recession. After a brief recovery in 1983 and 1984, it fell again in 1985 and through the first quarter of 1986 to depths approaching those of the 1982 recession. (See Figure 5, page 7.)

Productivity

Another critical indication of a long-term competitiveness problem is the comparatively slow pace of U.S. productivity growth. After the early 1970s, productivity growth -- measured

U.S. COMPETITIVENESS–REAL WAGES

FIGURE 1
INDEX OF ADJUSTED HOURLY EARNINGS FOR ALL PRIVATE NON-AGRICULTURAL ESTABLISHMENTS, 1977 DOLLARS, 1947–1986

Source: Department of Labor, Bureau of Labor Statistics

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U.S. COMPETITIVENESS–REAL WAGES

FIGURE 2
AVERAGE HOURLY EARNINGS FOR ALL NON-AGRICULTURAL ESTABLISHMENTS, SEASONALLY ADJUSTED MONTHLY DATA, 1977 DOLLARS, 1977–1986

Source: Department of Labor, Bureau of Labor Statistics

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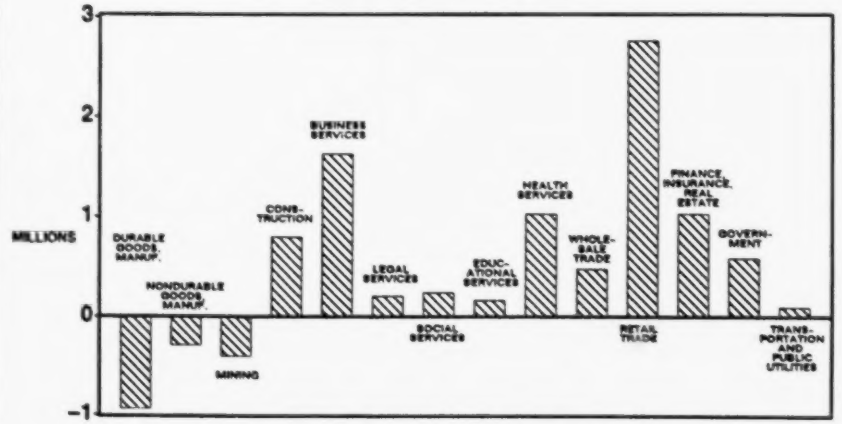
U.S. COMPETITIVENESS–JOB CREATION

FIGURE 3

JOBS CREATED IN SELECTED SECTORS OF THE ECONOMY
FROM JULY 1981 TO JULY 1986



Source: Department of Labor, Bureau of Labor Statistics

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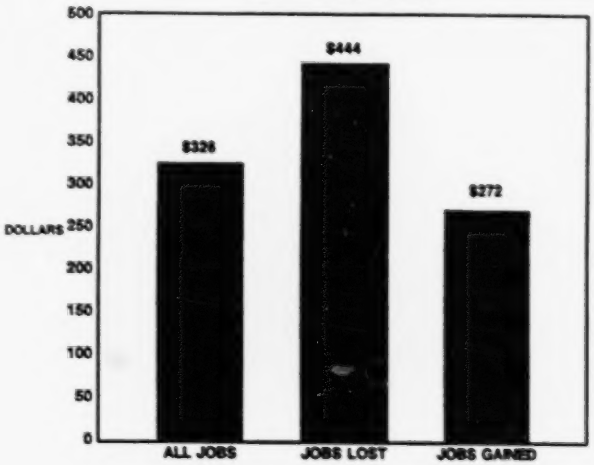
U.S. COMPETITIVENESS–JOB CREATION

FIGURE 4

AVERAGE WEEKLY WAGES OF JOBS LOST AND JOBS GAINED
BETWEEN 1979 AND 1985



Source: Industrial Union Department (AFL–CIO) analysis of Bureau of Labor Statistics data

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U.S. COMPETITIVENESS–CORPORATE PROFITABILITY

FIGURE 5

ANNUAL RATE OF RETURN ON TOTAL ASSETS IN THE MANUFACTURING SECTOR, ANNUAL AVERAGES, 1956–1986

Source: Department of Commerce, Federal Trade Commission
1986 figure reflects data for the first three quarters of the year.

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as the growth in real gross domestic product per employed person -- declined sharply through most sectors of the American economy. Although productivity growth rates simultaneously decreased in most other industrial countries, the decline in the United States growth rate began from a lower base rate and in some cases exceeded those of its major industrial trading partners. From 1960 to 1985, U.S. productivity growth was substantially lower than in any other advanced industrial country. As a result, U.S. producers' once-substantial advantage in productivity levels had narrowed dramatically by 1985. (See Figure 6, page 9.) In several sectors, such as steel, autos, machine tools and semiconductors, competitors' productivity levels now equal or exceed U.S. levels. The low level of U.S. manufacturing productivity growth has been particularly dramatic vis-a-vis West Germany and Japan. (See Figure 7, page 9.)

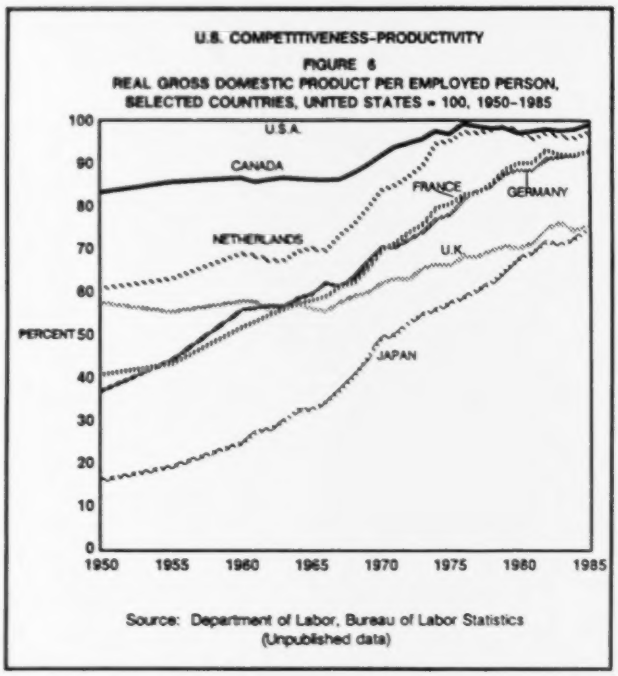
The economic recovery that began in 1983 has caused productivity growth to rise, as is usually the case in a cyclical upturn. But the pace of the increase has been disappointing. For the first several quarters of the recovery, productivity growth in the non-farm business sector closely matched that of previous U.S. postwar expansions, but the growth began to lag previous recovery rates at about the mid-point of the expansion and stagnated in 1985. During 1986, U.S. business sector productivity growth increased by only 0.7 percent. Nonfinancial corporate productivity growth was zero.

Recent productivity growth in the critical manufacturing sector has been better than the average of previous expansions and better than any recent expansion since 1970. From the 1982 recession to 1985, productivity in manufacturing had risen at an average annual rate of 4.3 percent. These figures raised hopes that the slowdown in manufacturing productivity growth since the early 1970s might have been reversed, at least temporarily. Indeed, between 1979 and 1985, U.S. manufacturing productivity grew at approximately the same rate as it did between 1960 and 1973. But in 1986, U.S. manufacturing-productivity growth fell to 2.7 percent. Furthermore, despite the higher growth rates of 1982-1985, U.S. manufacturing productivity growth remained slower than that of many trading competitors, most notably Japan. (See Table 1, page 10).

Trade

Of all the factors that reflect America's declining competitiveness, trade has received by far the most attention. The United States' staggering and growing trade deficit is usually the focal point in any discussion, and for many it is synonymous with the competitiveness challenge. The numbers are overwhelming. Since 1985 when the PCIC issued its report, the trade deficits -- both merchandise trade and current account -- have grown significantly.

Merchandise Trade. Trade deficits are a relatively new phenomenon for the United States. The United States did not run a trade deficit this century prior to 1971. Since then, U.S. trade deficits have grown significantly. In 1986 the U.S. merchandise trade deficit reached



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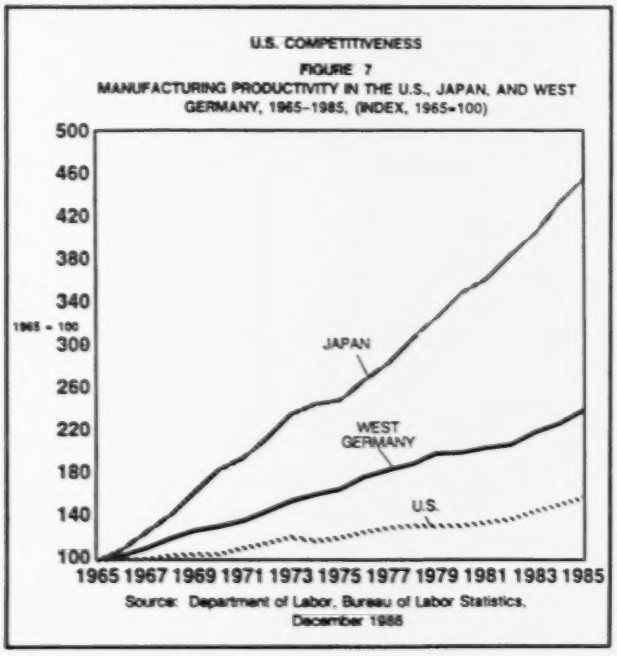

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TABLE 1

ANNUAL PERCENT CHANGES IN MANUFACTURING PRODUCTIVITY
SELECTED COUNTRIES
1960-1985

	United States	Canada	Japan	France	Germany	Italy	United Kingdom
Output per hour:							
1960-85	2.7	3.4	8.0	5.5	4.8	5.4	3.5
1960-73	3.2	4.7	10.3	6.5	5.8	7.3	4.3
1973-85	2.2	1.9	5.6	4.4	3.7	3.5	2.7
1973-79	1.4	2.2	5.5	5.0	4.3	3.3	1.2
1979-85	3.1	1.7	5.7	3.8	3.2	3.7	4.2
1984	4.1	3.7	7.0	3.9	3.7	5.4	4.5
1985	4.4	3.2	5.0	3.3	5.6	3.1	3.4

NOTE: Rates of change based on the compound rate method.
Source: U.S. Department of Commerce

another record level for the fourth consecutive year. The deficit of $170 billion for 1986, represented an increase of 20 percent over the 1985 deficit of $149 billion. In absolute magnitude, both the 1985 and 1986 deficits are larger than the national incomes of all but twenty countries. America's 1986 trade imbalance will top 4 percent of GNP, a percentage that exceeds previous U.S. levels. The 1986 figures were particularly disturbing, given the continued decline of the dollar and further reductions in oil prices. These factors could not offset the decade-long trend of soaring imports and weak export performance; between 1980 and 1986, U.S. exports remained practically unchanged, while U.S. imports rose by over 50 percent. In the merchandise trade account, the United States imports almost twice as much as it exports.

Although the 1986 trade imbalance shows up in all commodity groups and with all of America's trading partners, it is the largest in manufactured products, which account for about three-fourths of total U.S. exports and imports. Given the dominant role of merchandise trade in the U.S. current account, America's trade problem is primarily a manufacturing problem. The difficulties facing the manufacturing sector today, however, could face other sectors of the economy in the future. By the end of 1986, even the traditional U.S. surplus

in high-technology manufactured products had turned into a deficit for the first time.

Current Account Balance. The current account balance, which is a broader measure of U.S. transactions with the rest of the world than the merchandise trade balance, is also an important external indicator of U.S. competitiveness. The current account deficit in 1986 was $140 billion, up from the deficit of $118 billion in 1985.

The current account balance summarizes many different kinds of economic transactions. After merchandise trade, which accounts for two-thirds of the total, the two most important sectors are investment income and business services.

The balance on international investment income continued to be positive in 1986, reflecting a larger stock of U.S.-held assets abroad than the stock of U.S. assets held by foreigners. In the future, however, net receipts on investment income may fall because foreign claims on U.S. assets have grown rapidly in recent years and will continue to expand as long as the United States continues to increase its debt with the rest of the world.

Despite much talk about the growing importance of services trade to the U.S. economy and the potential role of such trade in rebuilding the U.S. competitive position, business services trade is still dwarfed by merchandise trade. In 1986, the United States had a $4.6 billion surplus in business services trade, compared to a merchandise trade deficit of $170 billion. This is an improvement over last year's business services surplus of $400 million, but is still small compared to the merchandise trade deficit.

More ominously for the future, the long-standing favorable balance in proprietary-rights trade -- profit remittances, receipts from licensing sales and the like -- is likely to continue to decline as foreign direct investment in the United States grows more rapidly than American direct investment abroad.

Causes and Consequences. America's unprecedented and growing trade deficit has both structural and macroeconomic roots. The macroeconomic causes are fairly evident. The strong U.S. economy served as a magnet for foreign goods and investment between 1980 and 1985. A series of significant tax cuts and increases in government spending, beginning in 1981, fueled an economic recovery in the United States, while the other major industrial economies continued to pursue slow-growth policies. As growing private investment demand plus enormous increases in the Federal government deficit exceeded the savings generated by U.S. firms and households, the United States looked to the rest of the world for funds to cover the gap.

Foreigners were attracted to American assets for a variety of reasons. These included slow growth in the other advanced industrial markets; the declining attractiveness of third-world nations in Latin America and elsewhere; deregulation and favorable changes in tax policy in U.S. financial markets; and most important, relatively high U.S. interest rates.

Closely related, the increased foreign demand for U.S. assets contributed to the increased value of the dollar, and the dollar's dramatic appreciation between 1980 and 1985 put U.S. producers at a serious price

disadvantage in domestic and international markets. With the dollar rising by 50 percent or more against the currencies of the other industrial countries and significantly against the currencies of the newly industrializing countries as well, the prices of U.S. manufactured goods rose substantially compared to the prices of foreign-manufactured goods.[6] As countless companies in manufacturing and agriculture can attest, a relative price disadvantage of this magnitude was a critical short-run factor behind stagnant exports and growing import penetration of the U.S. market. (See Figure 8, page 13.)

There are several reasons why the decline in the dollar's value has not yet reduced the U.S. trade deficit. First, there are always substantial lags between a change in exchange rates, a change in import prices and a change in demand (in this case away from higher-priced imports toward lower-priced domestic substitutes). In part, the fall in the dollar's value has been uneven. Approximately 40 percent of U.S. trade is with Canada, Mexico, Brazil, Korea, Taiwan, Hong Kong and Singapore; the currencies of these countries remained relatively unchanged vis-a-vis the dollar through the end of 1986.

Second, foreign competitors have reacted more aggressively to the dollar's fall than expected. Since the dollar began to depreciate in February 1985, import prices (excluding petroleum prices) rose only 4 percent through March 1986, which suggests that foreign firms have chosen to reduce profit margins rather than lose their market share in the United States. In particular, Japanese and German firms have not raised their dollar export prices nearly as much as the shift in currency values would indicate. Instead, many have initiated major steps to cut costs and improve productivity. They also have allowed their substantial profit margins to erode, all in an effort to hold the market shares they won during the period of dollar appreciation. Having established a presence in the United States, foreign firms will not easily give up their hard-won distribution networks, name recognition or market share.

Third, the protracted era of a high dollar appears to have significantly altered supply and demand patterns. Many foreign suppliers have expanded their capacity to serve the U.S. market. Many domestic suppliers have moved offshore or subcontracted more of their production abroad. Domestic consumers now prefer new, previously unknown and unavailable foreign goods. For these reasons, a change in exchange rates is likely to have a smaller impact than before the dollar's rise. American purchasers have come to associate imports with quality, reliability, service and state-of-the-art technology. They may require a very large increase in import prices or a changed perception of the quality of U.S. products before they are willing to switch back to domestic substitutes.

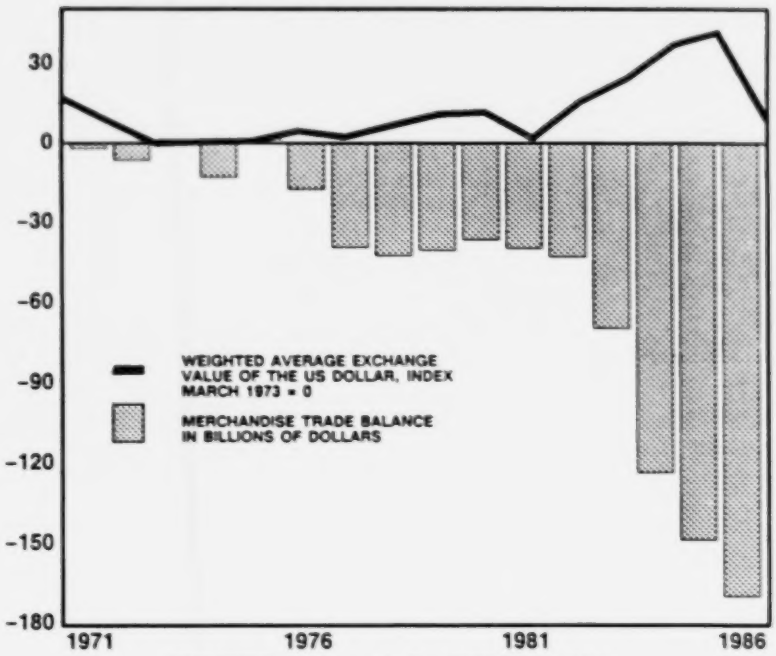
Fourth, the Third World debt crisis, especially in Latin America, has slowed the improvement of the U.S. trade balance, despite the dollar's recent fall. As long as the flow of new capital to debtor nations is curtailed, as it has been since 1982, the Less Developed Countries (LDCs) will need to continue their export drives and limit imports. Their exports have been targeted at the U.S. market. In 1985, for example, the United States imported approximately two-thirds of LDC manufactured

U.S. COMPETITIVENESS–BALANCE OF TRADE

FIGURE 8

MERCHANDISE TRADE BALANCE, 1971–1986

EXCHANGE VALUE OF THE U.S. DOLLAR, 1971–1986



EXPORTS: F.a.s. excluding DOD Grant Aid

IMPORTS: Customs value (1971–1973), C.i.f. value (1974–1986)

Sources: Bureau of the Census, and Federal Reserve Board

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exports, while Europe, with a comparable population, imported 23 percent and Japan, with half the U.S. population, imported only 6 percent. As a result, the U.S. trade position with the high debt countries has deteriorated significantly. Absent aggressive implementation of a debt program, it will be extremely difficult to improve significantly the U.S. trade imbalance with these countries. In 1981, before the demand-restricting effects of the debt crisis began to be felt, nearly 40 percent of U.S. manufactured goods exports went to the developing countries.

The long-term consequences of America's large and rising trade deficits are alarming. As an aggregate measure, the current account shows the balance of a nation's transactions with the rest of the world. A surplus indicates that the nation is producing more than it is consuming. A deficit indicates that the nation is consuming more than it is producing. A surplus, in turn, implies that the nation is building up claims on foreign goods and wealth. A deficit implies that the rest of the world is building up claims on American goods and wealth.

From this perspective, the current account deficits accumulated by the United States since 1982 represent five years of living and consuming beyond the nation's productive potential and five years of building up debt with the rest of the world. The numbers themselves are staggering. The United States went from a current account surplus of $6.3 billion in 1981 to an estimated deficit of $140 billion (more than 3 percent of GNP) in 1986. From

TABLE 2

U.S. INTERNATIONAL INVESTMENT POSITION
SELECTED YEARS
1970-1985
(Billions of Dollars)

	1970	1980	1981	1982	1983	1984	1985 p/	1986*
Net Position								
Net Creditor (+) or Debtor (-)	58.5	106.0	140.7	147.0	106.2	4.4	-107.4	-220.9
Total Assets								
(U.S. Investment Abroad)	165.4	606.9	719.7	839.0	893.8	898.2	952.4	1,052.2
Total Liabilities								
(Foreign Investment in U.S.)	106.9	500.8	579.0	692.0	787.6	893.8	1,059.8	1,273.1

Source: U.S. Department of Commerce, Bureau of Economic Analysis.
p/ Preliminary.
* Preliminary analysis based on 1986 current account estimates.

a net creditor with $147 billion of foreign assets in 1982, the United States became a net debtor with approximately $220 billion of foreign debt by 1986. (See Table 2, previous page.)

As long as the United States continues to mount large merchandise trade deficits, it will continue to owe more and more to foreign investors. This debt ultimately will have to be repaid with interest, meaning that at some point America will have to produce more than it consumes. Whether this reversal occurs along with an increase or reduction in real incomes, whether by continuing to depreciate the dollar and protecting U.S. goods or by making U.S. products more attractive through productivity and technology improvements -- depends critically on the way in which the United States addresses its long-run competitiveness problem.

Technology

The President's Commission emphasized that America's declining technological lead was an important cause of the nation's inability to succeed in international markets. The 1986 U.S. deficit in high-tech trade is perhaps the most dramatic example of the continuing decline in U.S. technological leadership. The traditional U.S. surplus in high-tech trade, viewed by many as an important barometer of U.S. competitiveness, registered a deficit in 1986 of $2.6 billion for the first time since this category was established. This dramatic example symbolizes the relative decline in U.S. technological strength, the difficulty that the United States has had commercializing new products and processes, the impact of the high dollar on U.S. trade flows, and the determined efforts of other countries to build up their technological infrastructure.

Research and Development Spending. Research and development drive the creation of new technology. In aggregate terms, the United States spends far more on R&D than any other nation, but as a percent of GNP, Japan and West Germany spend about the same amount on R&D as the United States, and more on civilian R&D as a percent of GNP than the United States. (See Figure 9, page 16.)

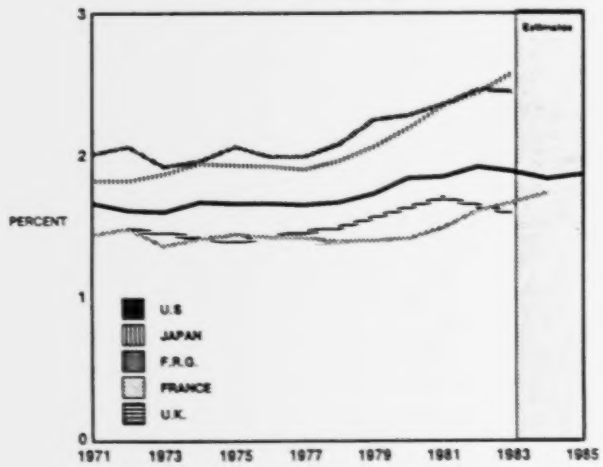
Approximately half of U.S. R&D spending is funded by the Federal government, which spends the bulk of its money on defense and space programs. Since 1981 U.S. Federal spending on defense-related R&D has increased rapidly, but Federal spending on non-defense R&D has declined in real terms. (See Figure 10, page 16.) It is difficult, however, to make a distinction between the commercial benefits of civilian and defense-related basic research. In many ways, basic research knows no real parent since it focuses on expanding the frontiers of science, not on application. As a result, it is impossible to predict what products and processes the findings generated by basic research will lead to.

Low Federal investment in facilities and equipment is also a problem. Over the past twenty years, Federal investment in university research plant and equipment has declined 95 percent in real terms. In 1984 Federal investment in research equipment began to rise, but it is still far from adequate to meet the need.

U.S. COMPETITIVENESS–RESEARCH AND DEVELOPMENT

FIGURE 9

ESTIMATED NONDEFENSE RESEARCH AND DEVELOPMENT EXPENDITURES AS PERCENTAGES OF GNP FOR SELECTED COUNTRIES, 1971–1985



Source: National Science Foundation

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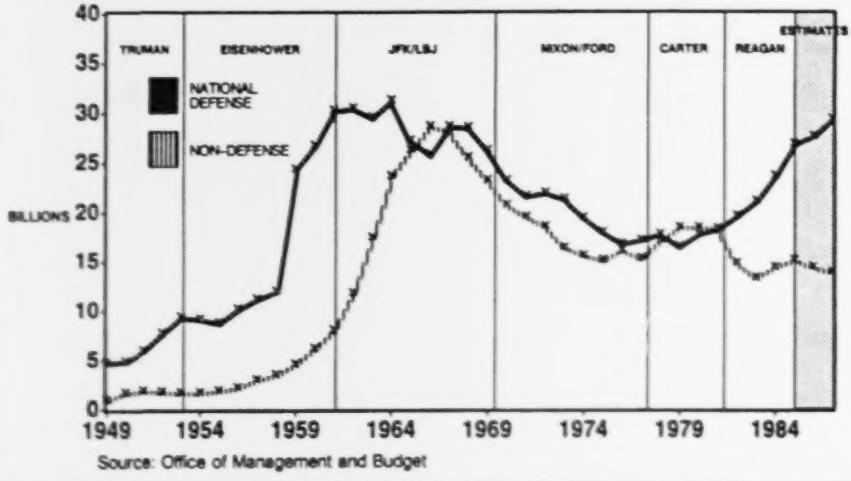
U.S. COMPETITIVENESS–RESEARCH AND DEVELOPMENT

FIGURE 10

FEDERAL SPENDING FOR RESEARCH AND DEVELOPMENT IN BILLIONS OF 1982 DOLLARS, 1949–1987



Source: Office of Management and Budget

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The problem is compounded by comparatively low U.S. corporate investment in R&D. While R&D spending by U.S. firms has improved from the low levels of the late 1970s, the growth in spending by Japanese and German firms has been even higher. Japan, with the most advanced commercialized technology in a growing number of fields, has joined Germany as a major innovative nation.

The leading firms in Japan's major industries now spend as much or more on R&D as a percentage of sales than do their U.S. counterparts. In both the United States and Japan, the top twenty companies account for a substantial percentage of total private R&D spending -- about 30 percent of the total in Japan and about 20 percent of the total in the United States. According to a recent study, R&D as a percentage of sales is now over 5 percent in Japanese firms and less than 4 percent in U.S. firms.[7] In 1978, the figures for U.S. and Japanese firms were approximately the same, but between 1978 and 1983, the R&D expenditures of the largest Japanese firms increased in real terms at an average annual rate of about 17 percent, a doubling of real expenditures in less than five years. The comparable growth rate for real R&D expenditures by the largest U.S. firms during the same period was only about 4.5 percent per year.

Patents. As an indicator of new technological advances, patents help give some indication of a nation's competitiveness. Again, the American trends are downward. The percentage of U.S. patents received by U.S. residents dropped from over 80 percent in 1965 to just under 60 percent in 1984 (see Figure 11, page 18) and declined further in 1985. In 1986, only 55 percent of the 77,000 patents granted by the U.S. Government went to U.S. citizens. The remainder went to foreign nationals, many of whom are likely to enter the American market.

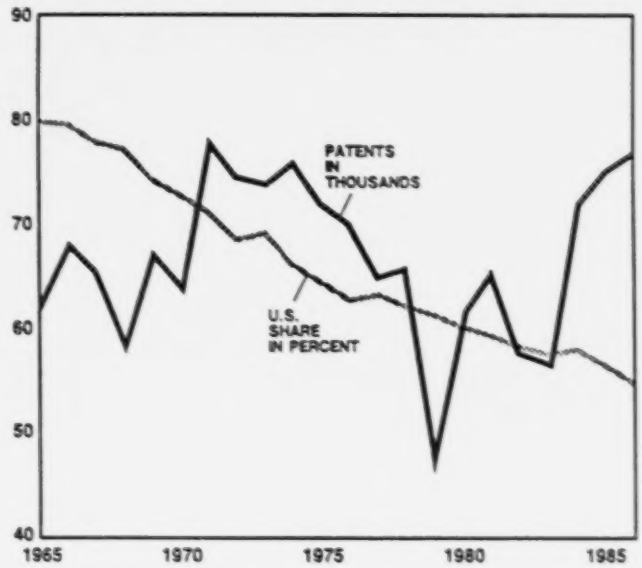
Some observers caution against reading too much into this trend. Many patents simply reflect the incremental advances being made in a given technology and are an indication of how many people are working in that field. Others fear, however, that foreign competitors, particularly Japan, arebeginning to reap the rewards of their increased investments in R&D in the form of new patented inventions. Between 1966 and 1984, two-thirds of the increase of U.S. patents awarded to foreign nationals went to the Japanese. As a consequence, the share of U.S. patents held by Japanese residents almost doubled between 1977 and 1985. In 1986, Japanese residents were awarded 17.7 percent of U.S. patents.

Supply of Engineers and Scientists. Twenty years ago the United States had far more scientists and engineers per capita than any of its competitors. From the late 1960s through the mid-1970s, however, the proportion of scientists and engineers in the labor force fell in the United States and rose steadily in several major foreign countries, most notably in Japan and West Germany. As a result, despite a recent increase in the proportion of U.S. scientists and engineers, the United States is no longer preeminent in this area. Japan, with half the population, graduates more engineers than the United States and has a larger absolute number of electrical engineers.

U.S. COMPETITIVENESS–PATENTS

FIGURE 11

PERCENTAGE OF U.S. PATENTS RECEIVED BY U.S. RESIDENTS AND TOTAL NUMBER OF PATENTS ISSUED BY THE U.S., 1965–1986



Source: Office of Technology Assessment and Forecast

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The number of American-born science and engineering students peaked in the early 1970s and has since declined. The National Science Foundation estimates that even if the United States could continue to attract students to science and engineering programs at the 1983 rate, the United States would graduate almost 700,000 fewer scientists and engineers over the next twenty years than in the past twenty.

With fewer American citizens electing technical fields, the United States is increasingly reliant on foreign nationals. In recent years more than half of the engineering Ph.D.s have been awarded to foreign students. The decline in the number of American students in this area has been matched by a shortage of professors. Ten percent of the nation's engineering faculty positions are currently vacant. Fewer students and professors in these areas today mean that the United States will have fewer scientists and engineers in the future.

Human Resources

The quality of the labor pool is critical to America's ability to compete. Increased productivity depends directly on educated, skilled and motivated people. The United States is falling behind a number of its major trading partners in developing its human resources. A troubled educational system, coupled with inadequate employee incentive systems and the lack of a comprehensive, coordinated training and adjustment program have undermined the development of a skilled, motivated and flexible American work force. U.S. policies have been much more inclined to support investment in facilities and equipment than development of human resources.

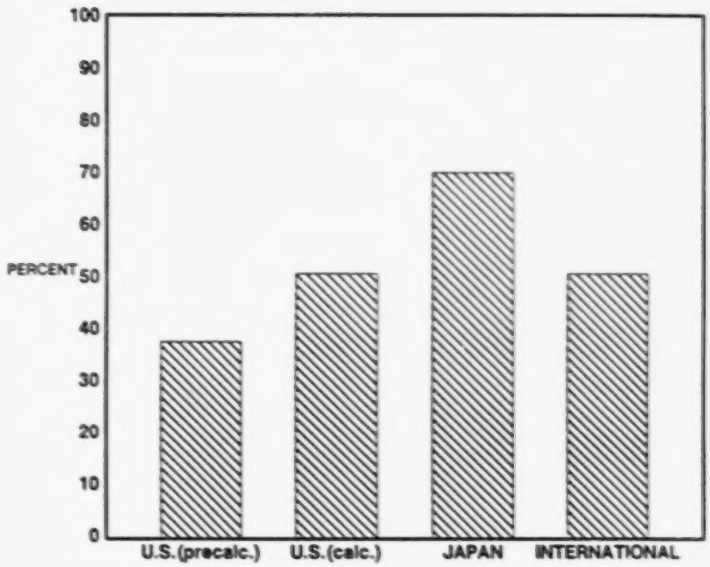
Education. The well-known problems in the educational system show up in a variety of indicators. The high dropout rate in the secondary schools -- reaching 26 percent -- is contributing to the development of a growing permanent underclass. The functional illiteracy rate among adults is a staggering 20 percent, and higher among minority groups, resulting in a vast underutilization of human resources. A survey of reading skills found that less than half of American 17-year-olds performed at higher than basic or intermediate levels.[8] A recent study of math students in several countries showed American 12th graders well behind their Japanese counterparts and students from many other countries. (See Figure 12, page 20.) Even the best U.S. students -- those who learn calculus in the 12th grade -- performed poorly against Japanese students and were only on a par with other participating countries.

The U.S. education community is beginning to recognize the scope of the problem, and to institute measures to correct these shortcomings. But change will not occur overnight. The severity of the problems requires a long-term commitment to educational excellence at all levels. Demographic trends must also be taken into account. Over 80 percent of the net additions to the work force to the year 2000 will be women, minorities and immigrants.

Reward Systems.
Education alone is not sufficient to the development of a skilled, motivated and flexible work force.

U.S. COMPETITIVENESS–EDUCATION

FIGURE 12
AVERAGE PERCENTAGE OF ITEMS SCORED CORRECTLY ON AN INTERNATIONAL SURVEY OF 12TH GRADE MATHEMATICS STUDENTS
1981/1982



International average includes U.S., Belgium, Canada, England and Wales, Finland, Hong Kong, Hungary, Israel, Japan, New Zealand, Scotland, Sweden, and Thailand.
Source: National Science Foundation

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Reward systems for employees must be designed to increase productivity. Employees must recognize that change is normal and beneficial. Here again, U.S. private and public sector policies have been lacking.

Inadequate incentive systems and continuing tensions between labor and management contribute to slow U.S. productivity growth. Although some progress has been made, current incentive systems and lack of employment security do not reinforce the work ethic. Most workers do not believe that they will benefit from the increased productivity of their firm, nor do they see any relationship between pay and performance. In addition, the lack of employee participation in decision-making perpetuates the lack of cooperation between labor and management. The U.S. Department of Labor is currently studying whether U.S. labor law inhibits greater labor-management cooperation.

Training and Adjustment. Technology, international competition and changing demands for resources are creating structural shifts in the economy and changing the skills that American workers need. The United States still does not yet have a comprehensive, coordinated policy to address this type of change. There needs to be greater appreciation of the need for training the current work force to enable them to improve productivity, performance and profitability. In addition, the two million displaced American workers need programs to upgrade their skills, learn new skills, relocate, and survive in the interim. Current programs are inadequate to help these workers make the transition to new employment. While recognizing that advance notification of plant closings is not always possible, experience has shown that such notification can lead to more effective delivery of adjustment services to dislocated workers. Many of the services themselves, however, need to be improved. Information provided to the workers often is either outdated or too general, while job search training often is uneven in quality and availability.

Current income support programs, such as Unemployment Insurance and Trade Adjustment assistance, do not directly or effectively encourage retraining or reemployment. Because unemployment insurance benefits expire after 26 weeks, workers often cannot afford to take the time necessary to be retrained. Finally, the poor quality of labor market information often prevents educational institutions from developing effective training programs and fails to give the dislocated worker a choice of a retraining program.

Capital Formation

The availability of sufficient capital, plus the willingness to invest it aggressively are essential to a nation's competitiveness. Capital builds and modernizes factories and laboratories. The wise investment of capital, coupled with advanced technology and skilled, motivated employees, is the critical underpinning of productivity growth.

Capital investment in the United States is affected by domestic macroeconomic policies. The two most important sets of policies in this regard are U.S. fiscal and monetary policy, which affect the cost and availability of capital. The growing Federal budget

deficit exerts considerable pressure on savings and investment flows in the economy. That deficit has mushroomed in recent years, rising to $221 billion in 1986, or 5.3 percent of U.S. Gross National Product. It is expected to be $174 billion in 1987. These large and protracted budget deficits have two direct effects on capital -- they decrease the availability for business investment and they increase its costs.

Interest Rates. The cost of capital -- just like the cost of labor, plant and equipment -- affects the overall price of products. When American firms must pay more for capital than their foreign competitors, they face a competitive cost disadvantage. The cost of capital is influenced by interest rates, and for the past decade the official U.S. discount rate has been significantly higher than that of its major foreign competitors. (See Figure 13, page 23.)

U.S. interest rates have been halved since the start of the recovery nearly four years ago, but the advantage in the cost of capital that could be expected from falling interest rates has been muted in part by the parallel fall in foreign interest rates. For example, interest rates in Japan remain much lower than those in the United States. Furthermore, falling U.S. interest rates have been accompanied by rising U.S. corporate indebtedness rather than by sustained capital investment. It should be noted, however, that with the internationalization of capital markets, U.S. interest rates have become somewhat less important in determining competitiveness since American firms can raise capital overseas.

Capital Spending. America's gross fixed capital investment as a percentage of Gross Domestic Product remained below that of its major international competitors in 1984 and fell even farther behind in 1985. Despite widespread euphoria about the investment boom encouraged by tax cuts and economic recovery, the investment rate in 1984 was only slightly above normal for a boom year. Since then, the rate has declined.

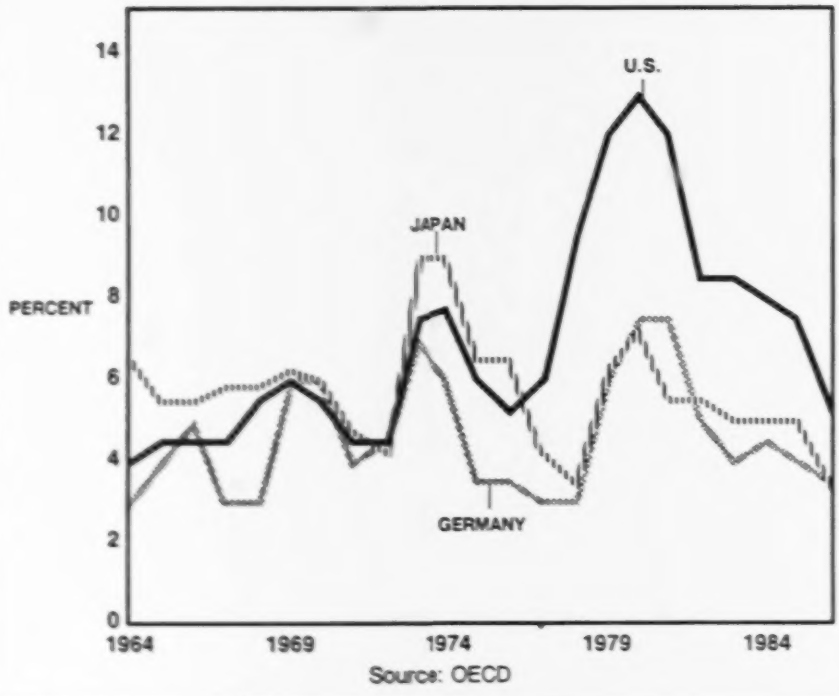
Business capital spending has leveled off since its ascent from the bottom of the 1982 recession. While occasional upticks in orders have occurred, as in December 1985 and February and September 1986, they have generally been due to isolated events and have not signified major new strength in the economy. Overall business spending on new plant and equipment in 1986 fell 1.7 percent from the 1985 level, and is projected to increase only 0.9 percent in 1987.

The composition of capital investment during the recovery raises further questions about U.S. competitiveness. A large percentage of the increase has been concentrated in automobiles and office machines. Survey evidence points to a very slow penetration of advanced manufacturing technology into U.S. industry, a sign that U.S. capital investment might be used more effectively to renew American capital stock in a way that would promote long-term competitiveness.

Savings Rates. Both the personal savings rate and the gross private savings rate in the United States are well below the levels maintained by

U.S. COMPETITIVENESS–INTEREST RATES

FIGURE 13
OFFICIAL DISCOUNT RATES FOR THE U.S., JAPAN AND WEST GERMANY, YEAR END FIGURES AND OCTOBER 1986 LEVEL, 1964–1986



Source: OECD

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foreign competitors. Tax reductions and the economic recovery helped boost the personal savings rate temporarily in 1984, but it plummeted in the second half of 1985 to its lowest rate in 35 years. (See Figure 14, page 25.)

U.S. personal savings as a percent of disposable personal income was only 5.1 percent in 1985, compared to approximately 16 percent in Japan. According to preliminary estimates, the U.S. personal savings rate fell even further in 1986 to only 3.9 percent of disposable personal income. (See Table 3, below.)

The gross private savings rate includes both personal and business savings and is therefore higher than the personal savings rate. Here too, the U.S. performance is well below that of its major competitors. (See Figure 15, page 25.) The gross U.S. private savings rate increased to 18.4 percent in 1984 -- a high rate by U.S. standards, but still disappointingly low when measured against foreign competitors. In 1985, the gross U.S. private savings rate fell to 17.4 percent.

The problem of low savings is aggravated by large U.S. Federal deficits. Although state and local governments actually generated a surplus of about 1.7 percent of GNP in 1984, these were swamped by huge Federal deficits. These deficits, combined with the borrowing requirements of the private sector, more than exceed the U.S. gross private savings. The difference has been covered by the inflow of foreign funds, which equalled about 15 percent of U.S. gross domestic investment between 1983 and 1985 and about 40 percent of the 1985 increase in GNP. Without the foreign capital, interest rates would have been much higher, crowding out private investment to make room for government borrowing needs.

TABLE 3

RATIO OF SAVINGS TO DISPOSABLE PERSONAL INCOME
SELECTED COUNTRIES
1970-1985
(In Percent)

	United States	Canada	Japan	France	West Germany	United Kingdom
1970	8.1	5.3	18.2	16.7	14.7	9.6
1975	9.2	10.9	22.5	18.6	16.2	12.8
1980	7.1	12.3	19.2	14.9	14.1	15.0
1985	4.6	12.1	NA	12.3	12.7	11.7

Source: U.S. Department of Commerce, Office of Trade and Investment Analysis.

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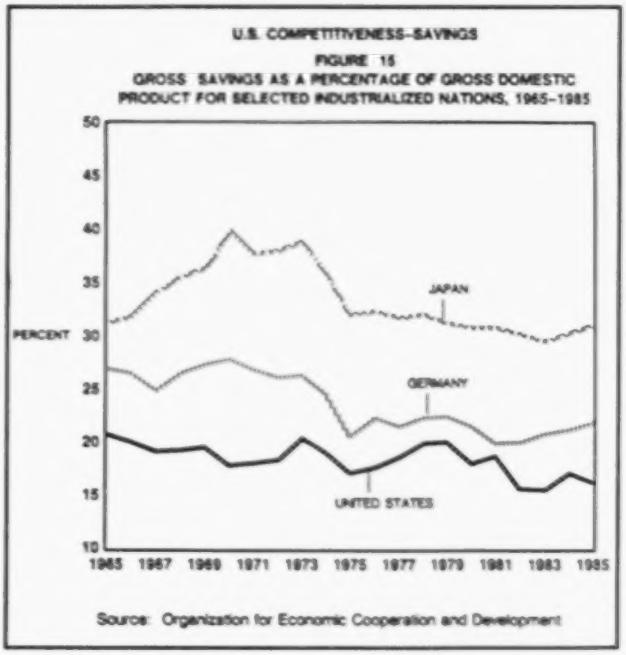

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FEDERAL POLICY IMPLICATIONS

Growing recognition of the competitiveness challenge has led to increased support for a variety of policy measures to restore America's competitive advantage. Indeed, it is likely that most major economic policy initiatives in the next year or two will be initiated and defended under the competitiveness label. The real danger in policy formulation is no longer insufficient attention to the problems, but excessive reliance on competitiveness as an umbrella under which to promote a number of often mutually conflicting policies, many of which have little or nothing to do with competitiveness and some of which may actually harm it.

It is important to emphasize that the unprecedented explosion of U.S. trade deficits and U.S. debt during the last several years makes policy measures to improve American competitiveness even more critical to the nation's future economic well-being. During the next several years, the United States will gradually have to scale down its trade deficit, at some point generating a trade surplus to service the outstanding foreign debt. If the United States relies on a continued drop in the dollar's value, a continued slowdown or decline in real wages, trade restrictions, or a recession at home to achieve the required trade surplus, the real incomes of U.S. citizens will suffer, without necessarily improving U.S. competitiveness.

In contrast, to the extent that the United States is able to improve its product design and quality, raise worker productivity and enhance technological innovation, it will be able to finance debt repayment out of additional output, income growth and an improved competitive position.

Thus, solutions to competitiveness problems must occur across the board. Policies must deal both with broad, macroeconomic budget and trade issues as well as with longer-term initiatives to enhance U.S. productivity through such measures as fostering technological innovation and better mobilizing human resources. Changes must be comprehensive and complementary, all designed with a single primary objective: to create the conditions that will help American companies and workers compete in markets at home and abroad.

Although the strong dollar and its macroeconomic causes were not solely responsible for creating America's competitive problem, they must be addressed as part of a long-term solution. At the same time, improvements in macroeconomic policy will be insufficient unless simultaneous changes are made to improve U.S. productivity growth, technological innovation and human capital. In other words, a correct alignment of exchange rates and an aggressive trade policy are

necessary pre-conditions to sustained economic progress. Yet, unless the nation also takes steps to modernize its factories, upgrade its research facilities and educate and train its workers, the long-term benefits are likely to remain elusive.

Federal Budget Deficit

One of the first steps should be a sustained and substantial reduction in the Federal budget deficit. Without such a reduction, solutions to redress the trade imbalance are likely to occur at the expense of, rather than in support of, long-run competitiveness and are likely to be accompanied by worsening macroeconomic conditions both at home and abroad. Unless the borrowing needs of the Federal government are decreased, efforts to reduce the size of the trade deficit will meet with little success.

Balancing the Federal budget will not occur without substantial short-term costs. The deficit is so large as to make any solution a difficult one. With competitiveness as the long-run objective, the choice of a mechanism to balance spending and revenues becomes even more complicated and necessary. Tax increases that further decrease business incentives to invest and innovate or that increase the cost of labor will hurt U.S. competitiveness. Likewise, expenditure cuts concentrated in the areas of productive human resources and R&D support will have an equally negative effect on the restoration of American competitiveness.

Given outstanding spending commitments on social security and defense and growing interest payments on the national debt, it appears that the only way to reduce the deficit significantly without eliminating almost all discretionary spending programs, including those to promote competitiveness, is to introduce some kind of revenue-raising measure. As evidence of this conclusion, in 1986 only $282 billion was spent by the Federal government for all items other than social security, defense and interest payments on the national debt, while the total budget deficit was $220 billion.[9] As a general principle, any future efforts at tax reform or deficit reduction through tax increases should be more attentive to their potential effects on U.S. competitiveness.

International Economic Policy

According to the President's Commission, one of the fundamental factors affecting competitiveness is the environment in which international trade is conducted. This environment is shaped by domestic trade institutions and policies, by the trade institutions and policies of other countries and by such multilateral organizations as the General Agreement on Tariffs and Trade (GATT), the World Bank and the International Monetary Fund. U.S. policy initiatives to strengthen the international trading environment must include improved macroeconomic coordination among the major trading partners and stronger multilateral rules for an open, fair international trading order.

Macroeconomic Policy Coordination. A more effective and regularized mechanism for coordinating macroeconomic policy and exchange rates among the advanced industrial

countries must be developed. Dramatic exchange-rate swings over the last several years have been caused by the adoption of unilateral economic policies in a world governed by increasingly integrated capital markets. These have had dramatic real effects on trade, employment and production patterns in the United States and throughout the world.

The United States has paid substantial adjustment costs in terms of lost capacity and lost employment. These costs would have been much smaller had the United States cooperated with its allies to fashion monetary and fiscal policies to dampen exchange-rate fluctuations.

The lesson is clear: because of greater capital market integration, no single country, not even the United States, can afford the luxury of making macroeconomic policy in a vacuum, with insufficient regard to its effects on world trade, employment and production flows. Unless this problem is dealt with, the threat of closed markets is a real one.

The process of coordinating domestic macroeconomic policy among the developed countries has been a focal point of discussion in the Group of 10 of the International Monetary Fund. Public attention was focused on this coordination in September 1985, when the Trade Ministers and Central Bank Governors of the five major industrialized countries (France, West Germany, the United Kingdom, Japan and the United States) met to discuss how to improve coordination of macroeconomic policies and secure an orderly appreciation of key currencies against the dollar. At that meeting, it was agreed that currency intervention alone would not be enough to make the dollar's value more appropriately reflect economic realities. Domestic macroeconomic commitments and greater convergence of growth rates are the keys to preventing sustained currency misalignment.

A credible U.S. deficit-reduction package will increase the prospects for greater macroeconomic coordination. The advanced industrialized countries, particularly Japan and West Germany, have been reluctant to adopt more expansionary policies, although the reluctance has tempered recently. The fears are that unless the U.S. deficit is reduced, expansionary policies will simply generate higher interest rates worldwide, cutting into investment spending at home and abroad and dampening the stimulus to growth.

Third-World Debt.

Because of the strong links between external financing capabilities and trade performance in the third world, especially in the debtor nations, U.S.-led efforts to bring greater balance and stability to the international trading system must be combined with efforts to resolve the debt crisis. Even if growth in the developed countries remains strong and world interest rates remain low, most of the large debtor nations will need substantial inflows of capital if they are to be able to increase their imports. To be effective, any debt strategy should have three components: 1) reform efforts by debtor nations to improve their creditworthiness; 2) sufficient flows of new capital; and 3) a commitment by other industrial countries to absorb LDC exports. As a result of inadequate implementation of a debt strategy, the debt crisis has continued, preventing the United States

from reversing its negative trade position with these countries.

Multilateral Trade Talks. Because the United States is still the world's largest economic power, it must continue to lead the effort to improve the multilateral rules of the game. U.S. efforts to initiate and shape a new round of GATT negotiations -- with special emphasis on improving the operations of current rules; expanding coverage to sectors such as services, intellectual property protection and direct foreign investment; and developing more effective rules for agricultural trade -- are important steps toward developing a more open international trading environment.

Unfortunately, although trade has grown dramatically in both volume and complexity, the portion covered by GATT rules has fallen precipitously. Even for the portion of trade covered by GATT rules, varying interpretations and the development of new practices have undermined the GATT's effectiveness. U.S. leadership is required to strengthen the GATT's credibility and to put an end to the trade interventions outside the GATT that have come to characterize the world trading system.

Domestic Trade Policies

The President's Commission found that the critical first step toward designing policies that support U.S. competitiveness is to make trade a national policy priority, vital to both the economic well-being and the national security of the United States. Recent concern over the U.S. trade imbalance has focused Congressional and Administration attention on trade, and recognition of the importance of trade to national security seems to be growing. Nevertheless, the commitment by the Administration that trade will *remain* a national priority must be institutionalized.

While the creation of the Economic Policy Council, chaired by the Secretary of the Treasury, has resulted in improved coordination among fiscal, monetary and trade policies, this may be more a function of the current Secretary than the institution. A coordinating mechanism of this type should be institutionalized. While acknowledging the need for coordination, the role of the U.S. Trade Representative as a Cabinet officer should be strengthened to ensure that trade interests are not subordinated to foreign policy or domestic considerations.

The President's Commission recommended a variety of specific measures to improve American trade policy. The recommendations include proposals to: improve domestic trade laws to facilitate adjustment to global competition and strengthen the U.S. response to foreign unfair trade practices; ease U.S. antitrust laws to promote mergers in industries affected by international competition; liberalize and simplify the U.S. export-control system; and intensify export-promotion efforts.

While the Administration's response to the Commission's recommendations has been somewhat slow in coming, the President's recently unveiled Competitiveness Initiative and legislative proposals include recommendations for action in a number of areas highlighted by the Commission.

The President's

Competitiveness Initiative and legislative proposals seek to improve U.S. trade laws by emphasizing opening markets through multilateral and bilateral negotiations; encouraging adjustment while providing improved relief to industries injured by import competition; and changing U.S. laws to make them more effective in dealing with unfair competition. They also contain proposals to strengthen the protection of intellectual property in world markets, to amend U.S. antitrust laws to reflect the changed dynamics of world trade, and to increase funding for the President's "war chest" to counter foreign tied-aid credit financing that works to the disadvantage of U.S. producers.

Also called for is a review of U.S. export-control policy, with the aim of reducing or eliminating rules that harm U.S. exporters without contributing to the national security. A recent report by the National Academy of Sciences questions the effectiveness of U.S. controls on exports of technology that can be supplied by American competitors, and estimates the cost of such controls at $9 billion in lost export sales. Commerce Secretary Baldrige already has announced a number of significant changes to U.S. export-control policy that address the problems highlighted in the Commission report.

While these are clearly steps in the right direction, they must be coupled by a willingness on the part of the Executive Branch to implement an activist trade policy oriented toward enforcing U.S. rights and safeguarding the interests of the U.S. firms both at home and abroad.

Technology Policies

In order to make technology a continuing competitive advantage, the President's Commission recommended that the United States take action in three areas: (1) create a solid foundation of science and technology relevant to commercial uses; (2) apply advances in knowledge to commercial products and processes; and (3) protect intellectual property by strengthening patent, copyright, trademark and trade-secret protection. Government, industry and education all have a role to play in this effort.

The Executive Branch has implemented some of the recommendations made by the President's Commission, but much progress remains to be made. Among the Commission's recommendations that have been implemented are the relaxation of antitrust barriers to cooperative research among firms, better protection of U.S. intellectual property rights and increased government support for basic research.

The National Cooperative Research Act of 1984 removed antitrust barriers to joint research, and more than 40 consortia have notified the Justice Department and the Federal Trade Commission that they intend to take advantage of the change. To better protect American intellectual property, the United States has made U.S. trade preferences for developing countries contingent on their recognition of U.S. intellectual property rights. The United States also has elevated the protection of intellectual property to a priority concern in the upcoming round of multilateral trade talks. Finally, the

percentage of Federal R&D support earmarked for basic research has been growing. The President's FY 1988 budget calls for a 4 percent increase in basic research funding.

Other recommendations of the Commission, however, have not been implemented. For example, tax incentives for private sector R&D have not been increased. The Tax Reform Act of 1986 reduced the R&D tax credit from 25 percent to 20 percent, and although the credit was extended until December 31, 1988, it was not made permanent. No action has been taken to broaden the definition of the kinds of R&D qualifying for a tax credit, to implement an R&D tax credit based on total R&D spending or to provide a preferential tax credit for industry investment in university research.

Both Congress and the Administration are increasingly concerned with the importance of science and technology to U.S. competitiveness. The President's Competitiveness Initiative contains many proposals that have been discussed in Congress. The three broad objectives of the President's Initiative--"generating new knowledge in advanced technologies; swiftly transferring new technologies to the marketplace; and expanding the nation's talent base in the sciences and technologies" -- coincide closely with the recommendations of the President's Commission.

The President has recommended a variety of initiatives to achieve these objectives. Among the most noteworthy are: (1) the establishment of a number of new university-based, interdisciplinary science and technology centers that will perform long-term research in areas that directly contribute to U.S. competitiveness; (2) the creation of a technology share program involving multi-year, joint basic and applied research with consortia of U.S. firms and universities; (3) the initiation of an exchange program between scientists and engineers in the public and private sectors; (4) an Executive Order to improve industry access to Federal science and technology efforts in order to increase Federal technology transfers; (5) legal and regulatory stability for research and development under the R&D tax credit; (6) programs to increase scientific literacy; (7) the expansion of budgetary support for basic research; (8) efforts to accelerate the spin-off of defense technologies to the private sector; and (9) a policy to help commercialize non-patentable results of federally funded research.

These programs are to be administered primarily by the National Science Foundation, the Department of Energy and the Department of Defense. The President has recommended a 17 percent increase in the budget of the National Science Foundation for FY 1988 and has proposed to double its budget over the next five years. While it is too early to comment on the specifics of the program, it appears to be a step in the right direction.

Human Resources Policy

In a world where capital and technology are increasingly mobile, U.S. competitiveness ultimately depends on the quality, productivity and flexibility of America's human resources. It also depends on an ability to agree on the nature of the problem and to develop public/private sector mechanisms to achieve

consensus. If the United States is to compete in world markets with rising real incomes for its domestic work force, its work force must have the quality, flexibility and productivity required to make and sell products at prices competitive with those of similar products produced by lower-paid workers elsewhere.

In the United States, much of the responsibility for developing a more skilled, motivated work force lies with the states and local communities, which fund and oversee the nation's public schools and universities, and with private employers, who are responsible for forging better worker-management relations, more effective on-the-job training programs and better employee incentives. That actions by these sectors can make a critical difference to worker quality and performance is suggested by a variety of evidence. New educational initiatives in Tennessee, New Jersey and Massachusetts, for example, have been notably successful in raising indicators of educational excellence. And, as a growing number of examples indicate, substantial productivity improvements in U.S. labor performance can be realized by changes in work place organization and manager-employee relations.

The President's Commission made several recommendations for Federal initiatives in the human resources area. The most important called for: (1) an expansion of Federal training and assistance programs for displaced workers; (2) greater funding to support engineering education, for example through expansion of NSF engineering research centers; (3) sustained federal support for a program of basic and prototype research in educational software funded through the NSF and the U.S. Department of Labor; and (4) increasing effective dialogue among government, industry, labor, academia, and other interested parties to develop a consensus on competitiveness issues.

Since the Commission's report was released in 1985, there has been a significant expansion in the number of NSF Engineering Research Centers, although the Commission's target of 25 centers has not been achieved. Funding for the NSF Presidential Young Investigators' Award program, which supports promising young science and engineering faculty, has been significantly increased. There has been no significant public sector activity to disseminate education software and video technologies to the nation's schools.

One of the most promising recent developments has been to recognize the need for an ambitious adjustment and retraining program for displaced workers by both the private and public sectors. The task force headed by Secretary of Labor William Brock concluded that diverse government programs to deal with displaced workers should be consolidated and funding for worker retraining should be nearly tripled. The plan emphasized that funds should be used for retraining and re-employment, as well as income support.

The President's FY 1988 budget earmarked nearly $1 billion for such a worker adjustment assistance program, and it seems certain that some kind of program with funding significantly above current levels will be enacted this year. According to the President's Competitiveness Initiative, an estimated

700,000 additional workers, almost triple the number now served, would be helped by the President's new dislocation program. The President's Initiative also calls for an $800 million program under the Job Training Partnership Act (JTPA) to provide summer jobs and/or remedial education and skills training to economically disadvantaged youth. The adjustment problem is the responsibility of the private sector as well. While public programs can assist in making the transition to new employment opportunities, the employer can facilitate adjustment through policies such as advance notification of plant closing and by providing services directly.

The positive aspects of the Administration's 1988 budget, however, are partly outweighed by the proposed significant reductions in vocational education and higher education funding. The budget would reduce financial assistance to college students by 45 percent, cut an additional $2 billion of grants and other aid programs to needy students, and eliminate interest subsidies on student loans. In exchange, the Administration budget requests an increase of $600 million for an experimental loan program to allow students to borrow more money than now permitted. While state and local governments have a fundamental responsibility for education, there is a role for the Federal government that may be undermined by these budget cuts. The effects of such a policy on long-term competitiveness could be extremely damaging.

Finally, little has been accomplished in the area of consensus building since the President's Commission's report was issued. Consensus is vital to addressing the competitiveness issue, and mechanisms for developing consensus should be upgraded and established. There are some 60 advisory committees, affiliated with the U.S. Trade Representative and the Departments of Commerce, Labor and Treasury, operated with the purpose of sustaining a dialogue on the issues affecting America's ability to compete in world markets. Yet these committees have a limited impact on their sponsoring agencies, Congress or anyone else. As currently constituted, they are not well suited to the task of bringing together the disparate segments of business, labor, academia and the public sector to discuss and resolve their policy differences.

These advisory committees should be reviewed and measures should be recommended to enhance their effectiveness in addressing competitiveness issues. In addition, government decision-making could be strengthened by providing a forum in which consensus can be reached on the facts of a competitiveness issue and in which the implicit tradeoffs among policy options can be made explicit.

PRIVATE SECTOR INITIATIVES

The President's Commission observed that the "American ability to compete lies within the private sector." The private sector has the chief responsibility for creating and applying technology, forging a committed work force and managing effectively. The private sector is responsible for the farsightedness of its strategies, the quality of its research, the performance of its workers and the attractiveness of its products.

There are too many signs that American business and labor need to redouble their efforts in these areas. It still takes too long to get an idea from the drawing board to the marketplace. The quality of too many U.S. products is still unacceptably low. Long-standing and deep-seated labor-management antagonisms in some areas are still unacceptably high. The pressure from Wall Street to generate high quarterly earnings and the threat of corporate takeovers still encourages many companies to postpone long-term improvements in favor of short-term profitability. U.S. efforts in the area of manufacturing technology have been inadequate.

In recognizing the responsibility that the private sector must bear for these shortcomings, however, it is also important to recognize that there are forces that the private sector cannot control. Even the most creative and efficient companies were hard pressed to compete effectively when placed at a price disadvantage that approached 50 percent in the early 1980s because of the overvalued dollar. It has not been easy for the private sector to accept the fundamental shifts that have produced a truly internationalized economy over the past 25 years. Today imports and exports represent twice as large a portion of U.S. GNP as they did just two decades ago, and fully 70 percent of the goods America produces compete with merchandise from other countries.

In many ways, the pressure point on American management today has to do with the time-frame for setting goals and measuring performance. On the one hand, U.S. companies are urged to adopt a long-term strategy to benefit customers, employees and company continuity, and to meet international competition. On the other hand, the quarterly measurement of pension fund performance, Wall Street's preoccupation with quarterly earnings, and the fact that executive compensation plans are heavily weighted in favor of the annual performance bonus create strong pressure for American management to concentrate on short-term financial results.

Takeover activity can reinforce the focus on the short-term. Some argue that takeovers transfer a company's assets into the hands of more efficient managers. At the same time, however,

takeovers can prompt management to postpone long-term investment plans that temporarily depress stock prices and focus on short-term action to keep stock prices high. Furthermore, there is concern that once a company is taken over, many long-term investments -- in such areas as R&D, employee training and market development -- are either postponed or cut in order to reduce company debt.

These short-term pressures are reinforced by other practices outside the private sector. For example, the average life expectancy for a tax reform bill is two years; the structure of the U.S. political system encourages American political leaders to weigh decisions in terms of short-term re-election schedules rather than in terms of what is best for the country over the long-haul; and U.S. business schools have shifted emphasis away from long-term marketing and production concerns to financial considerations with short-term time horizons.

Labor-Management Relations and Productivity

For many managers and employees, adjusting to this new setting has been difficult. Foreign competitors have gained a growing foothold in many sectors of the U.S. economy and have come to dominate some industries. Partly as a result, U.S. plant closings and layoffs have been widespread, which in turn have contributed to confrontational labor-management relations.

Nonetheless, there are signs that U.S. labor-management relations are improving. A number of companies and unions have reached more flexible, cooperative work arrangements that involve trade-offs in short-term gains for longer term job security. The 54 strikes involving 1,000 or more workers in the United States during 1985 were the lowest since the Labor Department first began compiling such statistics in 1947. And the 5.9 million man days lost to labor disputes in 1985 were relatively small compared to the 20.8 million lost in 1980. It is important that U.S. labor law not contribute to labor-management confrontation.

Although there is a growing awareness of the importance of productivity to competitiveness, the United States is still struggling in this area. In 1986, preliminary estimates indicate that nonfinancial corporate productivity growth in the United States was zero. In the U.S. manufacturing sector, productivity growth in 1986 rose by 2.7 percent, but even this rate is below the growth that the United States enjoyed from 1982 to 1985. Hourly compensation in 1986 rose by only 2.4 percent, which is the smallest rise since this measure was first calculated in 1959.

Despite this disappointing performance, there are some indications that the U.S. private sector is gaining a better understanding of productivity. There is a growing recognition by American management that companies cannot increase productivity simply by executive fiat. Productivity means much more than a speed-up of production lines, and when it is reduced to this, labor understandably resists. By the same token, labor must recognize that it also has a stake in boosting U.S. productivity. Labor cannot simply regard productivity as the

responsibility of management or see job retention as the only goal. Instead, both parties must cooperate from the very outset in the planning and implementation of productivity programs. Employment security and efforts to ensure that all parties share in the benefits resulting from productivity gains are also important. Furthermore, productivity cannot be treated separately from other business concerns. Experience has shown that efforts to improve both the quality of products and the quality of worklife can make a powerful contribution to the effort to increase productivity.

Clearly, a segment of U.S. business has neglected the importance of quality. In recent years, it has become increasingly evident that, along with price and design, quality is a critical selling point. Once a company has lost its reputation for high quality products, it is difficult to regain it, as many American companies have discovered. Conversely, as Japan and West Germany have demonstrated, once a country has earned a reputation for quality products, it becomes a powerful asset in the international marketplace.

Manufacturing Technology

Technology is an important part of the effort to restore U.S. competitiveness. It is a mistake to associate technology exclusively with "high-tech" firms. Basic manufacturing makes extensive use of technology, and there are signs that the United States is falling behind in the critical area of manufacturing technology. Robotics alone will not bring down costs and boost productivity unless they are conceived and implemented as part of the total manufacturing process.

More American firms have begun to realize that they cannot improve their competitiveness simply by throwing technology at the problem. Technology is only as valuable as the employees who work with it, and must be carefully integrated with people and processes. Some companies have begun to introduce advanced automation technology as part of an overall human resources strategy. In many cases it has resulted in the need for fewer employees, especially among mid-level management. It has also helped to reduce costs, improve productivity, bring senior managers closer to the shop floor and given those working on the shop floor more decision-making power.

Research and development is central to efforts to improve science and technology. Cutting R&D expenditures may still be a quick way to improve quarterly earnings, but many corporate executives have learned the hard way that they do so only at their long-term risk.

Cooperative Ventures

American corporations have begun to take advantage of liberalized antitrust laws to join in more than three dozen research consortia. The objective of these cooperative efforts is to pool resources in the discovery of new knowledge and creation of new processes in order to accelerate the application of these advances in the marketplace. Progress has been made, but some important problems remain to be resolved. Many of the companies involved in these consortia have been

reluctant to loan their best scientists and engineers, and it is still uncertain how advances will be shared among companies that are both collaborators and competitors. Furthermore, these efforts continue to face difficulty in bridging the gap between basic research and commercially successful products.

These cooperative ventures extend beyond just the corporate sector to include colleges and universities. American business and education have dramatically increased the quantity and scope of their partnerships. Universities conduct over 50 percent of the basic research on which technological innovation depends. In recognition of this reality, U.S. business has invested hundreds of millions of dollars in the past decade to upgrade university laboratories and research facilities.

Nevertheless, the R&D infrastructure of American colleges and universities continues to deteriorate. Higher education officials, just like their counterparts in business, have deferred long-term investments in favor of immediate operating expenses. One-half of higher education's physical plant (research laboratories, equipment, libraries and classrooms) is more than 25 years old. A recent survey by the National Science Foundation found that 20 percent of university scientific equipment is obsolete.

The collaboration between business and higher education also includes new efforts in the area of education and training. Employment security can serve to help promote education and training efforts since it demonstrates to employees that their enhanced efficiency will not result in lay-offs and reinforces company commitment to maximizing the skills of its work force. American big business has become a big educator, spending as much as $30 to $50 billion a year for corporate education and training efforts that range from teaching employees remedial reading to advanced computer technology.

Reversing the problems facing the American private sector will not occur overnight. Entrenched business practices are not easy to overcome. In addition, the competitive landscape has changed. The recent decline in the dollar will not cause U.S. firms that have invested millions of dollars in overseas plant and equipment to suddenly turn their backs on these investments. At the same time, many foreign companies took advantage of the macroeconomic environment of the early 1980s to build factories and establish extensive distribution networks in the United States, so as to be closer to the world's largest market. Having established a presence in the United States, foreign firms will not easily give up their hard-won distribution networks, name recognition and market share.

America is competing for its economic future. It will not be enough simply to improve on past performance, especially when foreign competitors are constantly making progress. The U.S. private sector cannot afford to be complacent in today's new competitive setting.

CONCLUSION

The deep-seated nature of the competitiveness challenge facing America will require some fundamental changes in the way all Americans operate, both in their professional and personal lives. In beginning to address competitiveness, a number of principles should be kept in mind. First, in developing solutions, America must be bold. A "business-as-usual" approach will not be adequate to the task that lies ahead. In addition, competitiveness cannot be viewed in narrow terms. While the trade deficit has been useful in focusing attention on America's competitiveness problems, any decreases in that deficit should not obscure the more fundamental structural problems facing America. Furthermore, recognition must be given to the appropriate roles for the private sector and the government in addressing the competitiveness problem. While public policies create the environment in which firms must compete, the private sector is ultimately responsible for its own performance. Finally, Americans must overcome their obsession with the short-term and begin to mobilize and sustain the political will necessary to solve the competitiveness problem at its root causes.

All Americans must respond to the competitiveness challenge. Without broad recognition of the problem and a willingness to make a personal and professional commitment, restoring American competitiveness will remain an elusive goal. When pressed in the past, the United States has always proven that its values are sound and that its institutions are resilient. The nation is being pressed again today. It is time to respond to the challenge.

FOOTNOTES

1. This definition was originally proposed in a report entitled, "Competitiveness" prepared for the President's Commission on Industrial Competitiveness by Stephen Cohen, David Teece, Laura Tyson and John Zysman, all of the University of California at Berkeley (Cohen et al., 1984). This report appeared as volume III of the Commission's Final Report.

2. For an insightful discussion of the problems of defining and measuring competitiveness along the lines followed here, see Allen Lenz, "U.S. International Competitiveness: Conceptual and Measurement Problems," in the recent Department of Commerce Report, United States Trade: Performance in 1985 and Outlook, October 1986.

3. These findings are based on calculations presented in the recent report of the Economic Policy Institute (1986) entitled "Family Incomes in Trouble," October 1986.

4. ibid.

5. According to recent empirical evidence by Lester Thurow, both exporting and import-competing industries have higher median earnings and have more equal earnings distributions than the economy as a whole. See Thurow (1986).

6. For example, a recent study by Dornbusch (1985) indicates that as a result of the dollar's appreciation between 1980 and 1984, the prices of manufactured goods in the U.S. rose by about 36 percent compared to the prices of manufactured goods produced by the major trading partners of the U.S.

7. The recent book by James C. Abegglen and George Stalk, Jr. (1985), from which the figures here are drawn, provides compelling evidence of the erosion in U.S. technological leadership compared to Japan.

8. These results are reported in the 1985 Report of the National Assessment of Educational Progress done by the Educational Testing Service.

9. This argument for 1986 was made by Richard Cooper in a recent article in the Brookings Papers on Economic Activity (1986).

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